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Date: 2/4/2010 Name: Allyn B. Rhodes Signature: Allyn B. Rhodes

Patent
Attorney Docket No. 13810-17

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Maurits VAN CAMP et al.

Mail Stop: AF

Application No.: 10/573,681

Group Art Unit: 1793

Filing or 371(c) date: January 5, 2007

Examiner: Tima Michele McGuthry Banks

Title: Process and Apparatus for Recovery of Non-Ferrous Metals from Zinc Residues

Confirmation No.: 7136

DECLARATION UNDER 37 C.F.R. § 1.132

Mailstop: AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

1. I, Maurits Van Camp, a citizen of Belgium and residing at Pansgatelaan 40, B-2640, Mortsel, Belgium, do hereby declare as follows:

2. I am a fully trained Master Extractive Metallurgist, having studied metallurgy at The University of Utah.

3. I became an employee of Umicore in 1981. I have 31 years of experience in the field of Extractive Metallurgy. Therefore, I am fully conversant with the technical field to which the invention disclosed and claimed in U.S. Application No. 10/573,681 belongs;

4. I have read and fully understand U.S. Application No. 10/573,681;

5. I have studied the record of U.S. Application No. 10/573,681, in particular the Office Action of November 4, 2009, and the prior art applied by the Examiner, in particular the teachings of U.S. 5,256,186 to Player et al. ("Player") and of U.S. 5,199,974 to Fugleberg ("Fugleberg").

6. The following observations are made by me;

7. Player fails to disclose a process for the valorization of metal values comprising extracting the Zn- and Pb-bearing fumes and valorizing Zn and Pb, as recited in claim 12.

8. Player discloses a process for recovering lead in the slag produced by the process. *See*, claim 1. As such, the process of Player is aimed at recovering Pb in the slag, not the fumes, of the process. To that end, Player discloses that the fumes from the furnace are recycled to the furnace rather than being extracted from the process, thus any Zn and Pb in the fumes is not valorized from the fumes of the process but rather recycled to the furnace for subsequent recovery in the slag. *See*, c. 2, ll. 4-6.

9. The instant specification states "[t]he invention relates to a process for the separation and recovery of non-ferrous metals from zinc-bearing residues," (see, Abstract) and "[t]his invention relates to the recovery of non-ferrous metals from zinc-bearing residues." See, ¶ [0001], emphasis added. (Note that citations to the present application are to the application publication US 2007/0095169.)

10. The specification further states "[t]he recovered fumes are rich in Zn and Pb, which are present as ZnO, PbO and/or $PbSO_4$" (¶ [0029]) and "[t]he invented process thus achieves the separation of metals as follows. Zn, Pb and Ge in the fumes, which can be treated by known means for separation of Pb and Ge in different residues, and of Zn in a leach liquor." (¶¶ [0034]-[0035]). As such, in the claimed process, Zn and Pb in the extracted fumes is separated and recovered from the process, not returned or recycled to the process, as disclosed in Player.

11. The American Heritage Dictionary defines "valorize" as "[t]o give or assign a value to." "valorize." *The American Heritage® Dictionary of the English Language, Fourth Edition.* Houghton Mifflin Company, 2004. 01 Feb. 2010. <Dictionary.com http://dictionary.reference.com/browse/valorize>.

12. Thus, given the specification of the instant application and the dictionary definition for the term "valorize", it is clear that "valorising Zn and Pb" from the extracted Zn- and Pb-bearing fumes in claim 12 means something more than merely recycling the fumes (and the metals contained therein) to the furnace, as disclosed in Player.

13. Player teaches one of ordinary skill in the art to recycle fumes extracted from the furnace back to the furnace so that any metals contained in the fumes can be recovered in the slag. As such, one of ordinary skill in the art considering Player would have no reason to alter the process of Player to valorise the metals (e.g., Zn and Pb) in the extracted fumes, as recited in claim 12.

14. Accordingly, claim 12 is not anticipated by or obvious in view of Player.

15. Fugleberg discloses a method for recovering metals contained in various metallurgic waste precipitates or dusts. *See*, c. 1, ll. 7-9.

16. Fugleberg discloses that volatilization of metals is controlled by adjusting the degree of oxidation in the furnace atmosphere. Fugleberg further discloses that the volatilization of zinc and lead requires reducing conditions, which reducing conditions (and hence degree of reducing) is easily adjusted by changing the fuel-oxygen ratio. *See*, c. 2, ll. 29-34.

17. Fugleberg provides a data table showing the composition of the slag for Example 1 and a data table showing the composition of the slag for Example 2. Each table includes a value for the amount of components Fe and Fe_3O_4. Fugleberg states that the Fe_3O_4 content is determined by using the Satmagan method.

18. With regard to the data tables, one of ordinary skill in the art would recognize and appreciate that the Fe content that is listed for the slag is the total Fe content in the slag. Further, one of ordinary skill in the art would appreciate that Fugleberg's tables include the content of Fe_3O_4 to report the fraction of the total Fe that is present as hematite. This fraction can be readily measured using a Satmagan magnetic detector (as indicated in Fugleberg) as an indication of the degree of oxidation or oxidizing conditions in the furnace atmosphere. A metallurgist uses this value to adjust and optimize process conditions.

19. Thus, one of ordinary skill in the art would know that the amount of Fe_3O_4 listed in the slag composition should not be added to the amount of Fe listed in the slag composition because the amount of Fe listed in the slag composition table already indicates the total amount of Fe present in the slag.

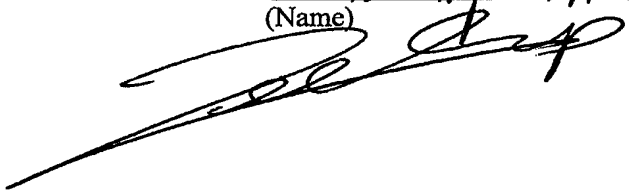
20. If the correct values for Fe content in the slag are used for Fugleberg, it is clear that Fugleberg does not disclose or reasonably suggest the process of claim 12 because Fugleberg does not disclose a slag composition meeting the requirements of claim 12.

21. Accordingly, claim 12 is not anticipated by or obvious in view of Fugleberg.

22. The undersigned petitioner declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

Date: 2/2/10

Van Camp Mauits
(Name)



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